

What is claimed is:

1. A nucleic acid molecule with the function of a caryopsis-specific promoter, which nucleic acid molecule

5 a) comprises the nucleic acid sequence defined by nucleotide 1-4683 of Seq ID No. 1;

b) comprises one or more sequence elements selected from the group consisting of Seq ID No.2; Seq ID No. 3; Seq ID No. 4; Seq ID No.5; Seq ID No. 6; Seq ID No. 7; Seq ID No.8; Seq ID No.9 and Seq ID No.10;

10 c) comprises a functional portion of the nucleic acid sequence stated under a);

d) comprises a sequence which hybridizes with at least one of the nucleotide sequences stated under a) and/or b); and/or

e) comprises a sequence which has approx. 60-99% identity, preferably approx. 75-99% identity, in particular approx. 90-99% identity and very especially preferably approx. 95-99% identity with one of the nucleic acid sequences stated under a).

20 2. A nucleic acid molecule as claimed in claim 1, which is a promoter active in monocots.

25 3. An expression cassette comprising a nucleic acid molecule as claimed in claim 1.

4. A vector comprising a nucleic acid molecule as claimed in claim 1 or an expression cassette as claimed in claim 3.

20 5. A vector as claimed in claim 4 which is suitable for transforming plant cells.

30 6. A host cell which is genetically modified with a nucleic acid molecule as claimed in claim 1, with an expression cassette as claimed in claim 3 or with a vector as claimed in claim 4.

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7. A host cell as claimed in claim 6, which is a pro- or eukaryotic cell.
8. A host cell as claimed in claim 6, which is a plant cell.
- 5 9. A plant comprising plant cells as claimed in claim 8.
10. Propagation material or harvested material from plants as claimed in claim 9, comprising plant cells as claimed in claim 8.
- 10 11. A method of generating transgenic plant cells as claimed in claim 8, wherein plant cells, plant tissue, plant parts or protoplasts are transformed with a nucleic acid molecule as claimed in claims 1, with a vector as claimed in claims 4, with an expression cassette as claimed in claim 3 or with a host cell as claimed in claim 6, and the transformed plant cells, plant tissues, plant parts or protoplasts are cultivated in a growth medium.
- 15 12. A method of generating transgenic plants as claimed in claim 9, wherein plant cells, plant tissue, plant parts or protoplasts are transformed with a nucleic acid molecule as claimed in claim 1, with a vector as claimed in claim 4 , with an expression cassette as claimed in claim 3 or with a host cell as claimed in claim 6, the transformed plant cells, plant tissues, plant parts or protoplasts are grown in a growth medium, and intact plants are regenerated from the obtained plant cells.
- 20 25 13. The use of a nucleic acid molecule as claimed in claim 1 for the caryopsis-specific expression of genes in genetically modified plants.
14. The use of a nucleic acid molecule as claimed in claim 1 for the caryopsis-specific suppression of genes in genetically modified plants.

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15. A method for the caryopsis-specific gene expression in plants, wherein a nucleic acid molecule as claimed in claims 1 is stably integrated into the genome of a plant cell, and the plant is regenerated from said plant cell.
- 5 16. A method for the caryopsis-specific gene suppression in plants, wherein a nucleic acid molecule as claimed in claim 1 is stably integrated into the genome of a plant cell, and a plant is regenerated from said plant cell.